



1. Project Data

Project ID P126817	Project Name Guangxi Laibin Water Environment	
Country China	Practice Area(Lead) Urban, Resilience and Land	
L/C/TF Number(s) IBRD-82490	Closing Date (Original) 31-Jan-2019	Total Project Cost (USD) 60,261,401.63
Bank Approval Date 31-May-2013	Closing Date (Actual) 31-Jan-2020	
	IBRD/IDA (USD)	Grants (USD)
Original Commitment	80,000,000.00	0.00
Revised Commitment	66,000,000.00	0.00
Actual	62,756,144.56	0.00

Prepared by Peter Nigel Freeman	Reviewed by Stephen Hutton	ICR Review Coordinator Victoria Alexeeva	Group IEGSD (Unit 4)
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2. Project Objectives and Components

a. Objectives

The Project Development Objective (PDO) was "to reduce flood risks and improve drainage in selected areas of Laibin City." The wording was identical in the Loan Agreement (page 5) and the Project Appraisal Document (PAD, page 4).

b. Were the project objectives/key associated outcome targets revised during implementation?



Yes

Did the Board approve the revised objectives/key associated outcome targets?

Yes

Date of Board Approval

15-Jan-2019

c. Will a split evaluation be undertaken?

Yes

d. Components

Component 1: River Flood Risk Management (original total cost: US\$58.99 million; actual cost: US\$66.01 million). (a) Upgrading of flood protection-related infrastructure along the Hongshui, Beizhijiang, and Longdong Rivers, including strengthening of existing natural embankments, and construction and/or rehabilitation of pumping stations, sluice gates, and flood protection dikes, and (b) installing of an integrated flood control and water quality monitoring system.

Component 2: Improving Urban Drainage (original total cost: US\$66.56 million; actual cost: US\$47.5 million). (a) Rehabilitating water streams through, among others, cleaning-up and desilting of canals, rehabilitation of natural embankments, ecological restoration and revegetation of embankments, and construction of regulating gates and rubber dams; (b) expanding and separating sewage and storm drainage networks in the old urban area of Laibin City through, among others, construction of sewage and drainage pipelines, separation of storm drains and sewers, and construction of drain outlets and wastewater separation points; (c) constructing and rehabilitating pumping stations, control and sluice gates, and rubber dams; and (d) piloting Low Impact Development (LID) practices, that is, low-impact sustainable drainage systems along urban roads of Laibin City, with increased vegetation, vegetative and bio-retention swales, permeable pavements (of parking and driveways), water reuse, upgrading of traffic and road designs for traffic safety, and improvement of nonmotorized and public transport facilities (small-scale civil works with limited construction impacts).

Component 3: Technical Assistance (TA) and Capacity Building (original allocation: US\$0.50 million; actual cost: US\$0.82 million). Providing TA and capacity building on (a) integrated flood risk management, including flood control and risk reduction, through development of flood maps, improvement of modeling capacity, and design and implementation of early warning systems, and (b) asset management and capital replenishment, aimed at improving the operations and maintenance (O&M) of assets, budgeting, and training of staff.

Component 4: Project Management and Supervision (original allocation: US\$1.30 million; actual cost: US\$0.61 million). Supporting the ability of the Project Management Office (PMO) and the Project Implementing Agency, Laibin Water Investment Company (LWIC), to coordinate and manage the implementation of the project, including (a) financial management (FM), procurement, contract supervision, and reporting; (b) outcome M&E; (c) construction supervision; and (d) ensuring of adequate implementation of environmental and social safeguards instruments.

e. Comments on Project Cost, Financing, Borrower Contribution, and Dates



Project Cost: The original project cost estimate was US\$127,380,000. At closing the amount disbursed was US\$114,940,000.

Financing: An IBRD specific investment loan (L.82490) of US\$80 million was approved on May 31, 2013. US\$14 million was cancelled in the January 15, 2019 restructuring.

Borrower Contribution: The Borrower was originally estimated to be providing US\$47,380,000 and at closure had disbursed US\$52,183,855.

Dates: The project was approved on May 31, 2013, became effective on November 8, 2013, the Mid-term Review was on May 9, 2016. The original closing date was January 31, 2019 but this was extended by one year to January 31, 2020.

Restructurings: The project underwent two Level 2 restructurings: on June 19, 2017 and on January 15, 2019. In the first restructuring, following the cancellation of two subcomponents and the rectification of miscalculations during appraisal, there was a reallocation between disbursement categories. In the second restructuring, because of significant pending changes to the master plan to accommodate new developments on the north bank of the Longdong River, a major subcomponent, "Flood management activities in Longdong River", was dropped from the project. No changes were made to the PDO, but the project scope was reduced and some key indicators were revised.

During the June 2017 restructuring several changes were made but the core outcome targets were not revised. The project cost was reduced by US\$ 10 million due to exchange rate gains and the cancellation of an urban sewage and drainage contract, which was deemed unnecessary after the optimization of the embankment designs. In addition there was a cancellation of a technical assistance study on municipal asset management and capital investment planning capacity (covered by a separate initiative in the Bank's Policy Research Group). The length of embankments and slopes strengthened was reduced through optimization of designs (original target: 11.6 km, revised to 10.0 km). The length of newly constructed drainage pipelines reduced from 26 km to 12 km to align them with the cancellation of a contract; the target length of newly constructed sewage pipelines was similarly reduced from 21 km to 15 km. A new PDO-level indicator: 'Direct beneficiaries of the project, with percentage of women' was added with a target of 234,000 persons (50% females) (Project Restructuring Paper, 2017).

During the January 2019 restructuring, the project scope and several key targets were scaled back. Flood Management Activities in Longdong River under component 3 were cancelled as was a Pilot for Low Impact Development practices for storm water management (small-scale civil works with limited construction impacts). The target value for the PDO indicator 'Percentage of population within existing urban area vulnerable to 1-in-50-year river floods' was altered from 10 percent to 23 percent, as compared to the baseline of 72 percent; direct beneficiaries of the project were reduced to 199,600 persons (48% female) The target length of embankments and slopes strengthened was further reduced from 10 km to 4.5 km and the total target area subject to inundation by 1-in-50 year river floods was increased from 5.0 km to 8.21 km (Project Restructuring Paper, 2019).

A split rating will be carried out for the 2019 restructuring. There were no changes to the PDO outcome targets in 2017. More information is provided on the restructurings in sections 3 and 4.



3. Relevance of Objectives

Rationale

Sector and Local Context: In China about 380 million people have migrated from rural to urban areas over the last two decades, and another 300 million people are expected to become urbanized by 2025 (ICR page 5). While the rapid urbanization has been a driver of economic growth and has helped raise living standards, it has also brought significant environmental problems and created challenges for the delivery of basic urban services. Laibin City, the project area, was selected to complement Bank support for a similar project in the same province. In both cases water demand and pollution levels had dramatically increased as a result of urban expansion, economic growth, and improved living standards, such that the capacity of its flood and drainage systems became a cause of major concern. Every few years Laibin experienced a major flood, and the flood risk was exacerbated by the dumping of solid waste into drainage channels, which reduced the water flow and increased the vulnerability to water logging after intense rainfall events. Moreover, during the dry months, Laibin experienced low rainfall, which made ensuring minimum flow in the city's canal system a challenge (ICR para 3). The project was to support the implementation of the local Five Year Plan for 2011–2015, a Laibin City Flood and Drainage Plan, and the Laibin City Master Plan for 2008–2025, which called for the construction of river flood protection infrastructure, the rehabilitation and expansion of the storm water and drainage network, and the improvement of the city's water environment.

National Context: The project's objective of reducing flood risks such as human casualties and economic losses including damage to homes and infrastructure was clearly relevant to China's 13th Five Year Plan for 2016–2020. This Plan emphasized the importance of strengthening water safety protection; promoting intensive and economic use of resources; expanding comprehensive governance of the environment; and strengthening the restoration and protection of the environment. Specifically, it also responded to the Plan's focus on accelerating the urbanization of the agricultural population and constructing "harmonious and livable cities".

World Bank Context: The PDO was consistent with two of the three themes in the World Bank Group's China Country Partnership Framework (CPF) for FY2020–2025 (Report No.117875-CN), namely, promoting greener growth and sharing the benefits of growth, since the project supported some of the poorest communities in the city (ICR page 18). In addition, the project aimed to reduce water pollution and strengthen natural resource management (water governance), which were also emphasized in the CPF. The project was part of the World Bank's extensive urban environment program in China, which had supported similar investments in another large city in Guangxi (Liuzhou), making it a strong partner to support this project. Innovative designs of integrated flood risk management and sustainable drainage systems were expected to benefit from the World Bank's global knowledge.

Following unprecedented urban growth since project approval, the Laibin Municipal Government (LMG) significantly revised its urban master plan in April 2018. It amended its land use plan downstream of the Longdong River to accommodate new developments, including redevelopment programs for industrial land and to host the then planned 2019 Guangxi Horticulture Expo. This had a direct impact on planned project-supported flood management investments in Longdong River as the flood management plan and technical designs had to be substantially revised and these major revisions meant that they could no longer be included within the project scope and timeline. Thus, the original targets for the project's beneficiary population and areas subject to inundation by 1-in-50-year river floods had to be adjusted to reflect the



cancellation of the Longdong river flood management subcomponent (ICR page 20). The length of strengthened embankments and slopes was also reduced.

The relevance of the project was substantial throughout the project life. Although subject to two restructurings in June 2017 and January 2019 and an appreciable reduction in scope, IEG considers that on balance relevance remained substantial.

Rating

Substantial

4. Achievement of Objectives (Efficacy)

OBJECTIVE 1

Objective

Reduce flood risks in selected areas of Laibin City.

Rationale

Theory of Change:

To support the objective of reduced flood risk, the project was to invest in flood control facilities, strengthening embankments, a flood management strategy and increased systems capacity, including a flood emergency plan and a real-time flood warning system. Technical assistance and training for improved planning and management practices were to enhance the city's capacity for operation and maintenance (O&M), monitoring and evaluation (M&E), capital investment planning, asset management, and project management, to ensure the sustainability of the outcomes.

Outputs (ICR page 15)

Length of embankments and slopes strengthened. Baseline 0.0; original target 11.6 km; achieved 39% of original target.

Area subject to inundation by 1-in-50 year river floods: Baseline 30.0 sq. km; original target 5.0 sq. km; achieved 87% of original target.

Completion status of flood hazard and risk maps for the city: Original target: maps complete; achieved all maps completed (100%); not affected by later reductions in scope.

Number of staff that attended training and study tours: Baseline 0 persons; original target 300 persons; actual 328. Achieved 109%; not affected by later reductions in scope.

Outcomes



Percentage of the population within existing urban areas vulnerable to 1-in-50 year river floods: Baseline 72%; original target 10%; actual 23%.

Direct beneficiaries of the project: New outcome indicator not included in the original results framework (introduced in 2017): 234,000 beneficiaries (48% female). The gender aspect was a mandatory corporate target. Actual: 199,600.

After optimizing the embankment designs one contract was deemed unnecessary and with exchange rate gains a saving US\$10 million was achieved.

Rating

Substantial

OBJECTIVE 1 REVISION 1

Revised Objective

Reduced flood risks in selected areas of Laibin City. [The PDO was unchanged but the 2019 restructuring reduced the project scope and the outcome targets]

Revised Rationale

Outputs

Target length of embankment and slopes strengthened reduced from 10 km (2017) to 4.5 km; baseline 0 km; original target 11.6 km; actual 4.63 km; revised target exceeded.

Target total area subject to inundation by 1-in-50 year river floods; baseline 30 sq. km; original target 5.0 km; revised target 8.21 km; revised target achieved.

Number of staff that attended training and study tours; baseline 0; target 300; actual 328; target exceeded. These staff received formal and on-the-job training of 328 individuals on the dissemination of information, O&M, monitoring and evaluation (M&E), flood risk management, and project management.

Status of flood hazard and risk maps: completed.

Outcomes

The outcome target value for percentage of the population within the existing urban area vulnerable to a 1-in-50 year river flood was changed from 10% to 23%; the baseline was 72%; actual 23%; the revised target was achieved. By the end of the project less than 1/4 of the urban population was vulnerable to 1 in 50 year river floods compared with 3/4 prior to the project.

Direct beneficiaries to the project (2017): Target 234,000 (48% women); revised target reduced to 199,600 (48% women); revised target achieved.



The project was to lead to a reduction in vulnerability to floods for a significant population and area through protective works, and after scaling back its anticipated scope, the revised scope was achieved. However, the restructuring was carried out only a year before closure.

The evidence provided on nonstructural measures was relatively weak, as indicators did little to capture their effectiveness. However, it is likely that the flood hazard and risk maps as well as the emergency warning system and hydrological simulation models increased the capacity of the LMG to prevent and respond to floods. The flood warning system was designed to collect, process, analyze and disseminate flood-related hydrological information using international best practice. Educational programs for flood control and geographic information system-based modelling were used to provide the relevant parties with flood information. However, the existence of training does not give an indication of the quality of training or its effectiveness in building capacity. However, the O&M plans in the agencies to which this function was transferred and the tools and systems implemented under the project are reported to be embedded in the city's administrative procedures and the O&M costs have been included in the fiscal budget of the Laibin Municipality (ICR page 25).

The ICR does not say whether the flood warning systems and emergency plans have been used and tested but the Second Project Paper on the 2019 restructuring says that the 12 month extension of the project was to allow additional time to test and implement the flood warning system and the Flood Emergency Plan. After following up with their counterparts, the project team advised that the Guangxi expo was going ahead but had been delayed by two years mainly because of the Covid-19 pandemic. The flood management plan in the Longdong river was updated after the revision of the land use plan.

Revised Rating

Substantial

OBJECTIVE 2

Objective

Improve drainage in selected areas of Laibin City.

Rationale

Theory of Change:

To support the objective of improved drainage, the project was to invest in drainage facilities, both drainage and sewage pipelines, as well as clean-up operations and the desilting of a canal. Technical assistance and training for improved planning and management practices were to enhance the city's capacity for operation and maintenance (O&M), as well as monitoring and evaluation (M&E), capital investment planning, asset management, and project management. These activities were to ensure the sustainability of the outcomes.

Outputs: (ICR page 15)

Km of newly constructed drainage pipelines: baseline 0 km; original target 26 km; actual 12.2 km.



Km of newly constructed sewage pipelines: baseline 0 km; original target 21 km; actual 16.2 km.

People benefitting from improved drainage/sanitation facilities: Original target set at appraisal, 282,000 persons (50% female); actual 127,500.

Municipal Asset Management TA: This was dropped as the task was completed under another Bank-supported activity by the World Bank Policy Research Group, which used Laibin as a pilot city for a case study (China: Asset Management in Small Towns). The results of the study were well-received in Laibin according to the Project Paper on the First Restructuring (paragraph B2).

Pilot for Impact Development Practices for Storm Water Management: This was cancelled. The Borrower had difficulty in securing the sites and the quality of the design did not meet the guidelines for consideration under a national program. Consequently, the TA was not pursued (ICR footnote 5 on page 10).

Outcomes

Urban area serviced by exclusive and improved drainage systems: Baseline 0 sq. km; original target 3.0 sq.km; actual was 4.17 sq. km.

The change in outputs (km of newly constructed drainage/sewerage pipelines) was not an underachievement but an efficiency gain. According to the ICR (page 14) the original target for beneficiaries was miscalculated and was corrected in the restructuring. However, the outcome target (urban area serviced by exclusive and improved drainage) was exceeded.

Rating

Substantial

OBJECTIVE 2 REVISION 1

Revised Objective

Improve drainage in selected areas of Laibin City. [The PDO and outcome indicator was unchanged, but there were changes in the scope of works]

Revised Rationale

The ICR states that the original target for beneficiaries in the project area was miscalculated at appraisal and was corrected in the 2019 restructuring. Although less pipelines were laid than originally planned, the actual area benefitting was enlarged due to prioritization of the worst areas susceptible to flooding.

Outputs

The length of newly constructed drainage pipes (baseline 0 km) reduced from 26 km to 12 km in 2017; actual 12.2 km; achieved 102% of revised target.

The target length of newly constructed sewage pipes (baseline 0 km) reduced from 21 km to 15 km in 2017; actual 16.2 km; achieved 108% of revised target.



The target for people benefitting from improved drainage facilities under the project (baseline 0) was amended from 282,000 (50% female) to 127,500 (48% female) in 2019; achieved 100% of revised target.

About 127,500 people benefitted from improved and sustainable drainage facilities meeting the revised targets. The assets were transferred to the appropriate municipal entity and arrangements were put in place for operation and maintenance (O&M).

Outcome Urban area serviced by exclusive and improved drainage: target 3.0 km was unchanged; actual achieved was 4.17 km. The outcome target was exceeded.

The project led to improvements in drainage in selected areas of Laibin City and achieved its revised targets. However, these targets were revised only a year before project closure, well after any errors in targets should have been identified. Some 127,500 people benefitted from improved drainage facilities under the project. The outcome for the extent of the urban area serviced by exclusive and improved drainage was 4.17 sq. km, exceeding the target of 3.0 sq. km. Although the planned municipal asset management technical assistance was dropped, this was because another Bank-supported activity fulfilled the function of ensuring the assets were appropriately transferred and that operations and maintenance (O&M) arrangements, budgets systems were in place. However, no evidence of this was provided as there were no indicators to measure this aspect.

Revised Rating
Substantial

OVERALL EFFICACY

Rationale

Reduced flood risks: Nearly 200,000 people benefitted from the project and the area subject to a risk of 1-in-50 year river flood was reduced from 30 sq. miles to 8.21 sq. miles. To put this into perspective, before the project 3/4 of the population were vulnerable to flooding but by project closure less than 1/4 were vulnerable.

Improved drainage: About 127,500 people benefitted from improved and sustainable drainage facilities. The urban area served by exclusive and improved drainage increased by 4.17 sq. km, exceeding the target of 3.0 sq. km.

The project achievements fell short of its original targets that included miscalculations. These targets captured works delivery but they were less effective in measuring the non-structural elements.

On balance, it is rated substantial, with moderate shortcomings.



Overall Efficacy Rating

Substantial

OVERALL EFFICACY REVISION 1

Overall Efficacy Revision 1 Rationale

The project successfully met its revised targets. These lead to substantial efficacy against its revised targets.

Overall Efficacy Revision 1 Rating

Substantial

5. Efficiency

The type of economic benefits identified at appraisal remained unchanged and included avoided flood damage, improved water quality and health, and a higher quality of life in the project areas owing to environmental and amenity improvements. A cost-benefit analysis was conducted at appraisal with an economic internal rate of return (EIRR) of 14.5 percent. Applying the same valuation approach, including using the same unit values assumed at appraisal for valuing avoided flood damages and environmental and amenity improvements (derived from assumptions of the increase in land and real property values), the EIRR at completion was 8.9 percent. The lower EIRR was due to the lower project outcomes (such as the smaller beneficiary population - 199,600 or 85% of the initial target) and reduced area size after project restructuring but without proportionally lower project costs (US\$ 114.9 million was still 90% of appraisal costs of US\$ 127.4 million). It was not possible to say from the information provided in the ICR whether there were cost overruns disguised in the restructurings.

The ICR points out (page 16) that, since appraisal the economic growth and higher living standard in Laibin increased the value of land and property, which in turn increased the economic value of flood control and other improvements to the quality of life of residents. If such adjusted values were taken into account the EIRR would be 13.7 percent. However, such methodology was not used in the appraisal analysis and so it is not directly comparable. Ideally, the appraisal analysis would have also captured increases in land and property values.

Since the LMG was responsible for loan repayments no financial analysis was undertaken. The city continues to levy wastewater tariffs and it was concluded that the LMG has the ability to repay the debt and cover the O&M expenditures from its annual budget.

Administrative and Operational Issues:

The project management office (PMO) experienced a higher than expected staff turnover rate, resulting in some implementation delays as staff took time to become accustomed to Bank policies and procedures. There was also an issue prior to 2017 in that counterpart funds were constrained. However of much greater concern was the fact that the domestic anti-corruption authority identified that there were serious fraud and corrupt practices involving PMO officials and implementing agencies' staff in procuring five civil works contracts signed between 2014 and 2016 with an estimated value of US\$ 34.8 million. According to the ICR (page 24), the LMG



did not promptly inform the World Bank of the situation and did not take appropriate action against the contractors in accordance with the conditions of contract. Following an investigation by the World Bank’s Integrity Vice Presidency (INT) department in 2019, the Bank declared procurement noncompliance in a letter dated March 12, 2020. Following this letter, the LMG agreed they would not seek payment of any unclaimed or outstanding amount under these contracts financed by the World Bank (about US\$ 8.0 million) and such amounts would be funded by government and not the Bank. Taking these events into account the overall efficiency rating is considered modest.

Efficiency Rating

Modest

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	14.50	98.50 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	8.90	98.70 <input type="checkbox"/> Not Applicable

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome

The overall outcome rating takes into account the substantial relevance of the PDO. Modest efficiency is applicable due to a lower EIRR and the corruption issues investigated by INT (see Sections 5 and 10b), while the efficacy is estimated according to the original outcome targets and revisions at the 2019 restructuring. The evidence presented for the non structural measures was relatively thin and could have been improved with a more robust results framework. The final outcome was, however, considered by IEG to be Moderately Satisfactory.

a. **Outcome Rating**
Moderately Satisfactory

7. Risk to Development Outcome

LMG demonstrated its ability to manage the project infrastructure and arranged for adequate transition of O&M responsibilities to the appropriate government agencies. The O&M plans in the agencies and the tools and systems implemented under the project are now imbedded in city administration procedures. O&M costs are included in the fiscal budget of Laibin Municipality since all the relevant agencies are budget entities.



The ICR points out (page 25) that even a slight downturn in the macroeconomic environment in China could create a challenging fiscal situation for its local governments, which already experience relatively constrained finances. This could potentially affect the development outcome overall, including the budgets of the various government agencies that took over the O&M responsibilities of the assets. Correspondence with the TTL revealed that the covid-19 virus has largely been contained and the recent downturn is showing signs of recovery. Thus far there are no negative impacts on available O&M funds affecting the project. Moreover, the drainage and sewer infrastructure requires relatively low maintenance costs, and the O&M of the sewer system is funded through wastewater tariffs, which are subject to periodic revision by the local government. Taking into account that the project investments are classified as priority basic infrastructure and used continuously, the risk of neglect is considered low.

8. Assessment of Bank Performance

a. Quality-at-Entry

During project preparation, the World Bank addressed some key challenges and proposed appropriate and innovative designs to reduce flood risks in Laibin City. The project design included appropriate implementation procedures, safeguards, and fiduciary arrangements. There was extensive and appropriate consultation with affected communities. The preparation of the project took into account lessons learned from similar projects and the Theory of Change was solid.

The results framework was sound in concept but for some indicators neither the sources of the data nor the methods of calculation were available. There was also a miscalculation in the number of beneficiaries of drainage and sewerage in the project area, as reported by the ICR; it was amended in the 2019 restructuring. The project did not anticipate the unprecedented urban growth in the city that occurred after approval but more thorough due diligence in the planning aspects would have uncovered the plethora of ambitious urban development schemes under consideration. It would have helped if the project team had included an urban planner. Another weakness at entry included an underestimation of the land acquisition and resettlement costs. Although the team likely could not have anticipated the decision to increase the compensation payments by the relevant authorities, they could have better estimated the number of people affected. The actual compensation payments were three times the appraisal estimate.

Quality-at-Entry Rating

Moderately Satisfactory

b. Quality of supervision

Implementation support missions were undertaken at least twice per year. Aide Memoires presented comprehensive and candid details of project performance and outlined suggested action plans. The task team regularly reviewed the project's implementation progress, the quality of the works, technical issues, fiduciary and, safeguards compliance, throughout project implementation. In addition, the team offered opportunities for the PMO staff to participate in procurement training and workshops. The task team



provided the significant support necessary to adapt the project to the changes occurring in the urban planning environment including a reduction of project scope due to a new city master plan. Two Level 2 restructurings were processed. However, IEG's view was that the formal request to Government for the second restructuring could have been made sooner. Adequate transition arrangements were nevertheless ensured through a dialogue with the client and assistance with the development of appropriate O&M plans for all project investments. An issue raised in the Borrower's report was that there were three consecutive Task Team Leaders (TTLs) assigned by the World Bank for the project supervision and support. According to this report, each change of TTL meant that the implementation rhythm of the project was disrupted. Although the transitions were smooth, stability of the management staff would have improved the project efficiency and the second restructuring would likely have been completed earlier.

Quality of Supervision Rating

Moderately Satisfactory

Overall Bank Performance Rating

Moderately Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The design of the results framework, the sources of data, and the definitions of indicators were agreed with the Laibin PMO. The baseline data were established as part of project preparation and were apparently verified by the World Bank task team but no further details are given in the ICR as to how the area vulnerable to 50 Year floods and the number of affected persons was calculated. Moreover, the ICR advises (page 12) that for some targets the calculation methods and data sources were not specified in supporting documents to the PAD.

Following the necessity of changing the project scope, the results framework was amended through two project restructurings and a PDO-level indicator on direct beneficiaries was added, which provided further perspectives on the project's reach to communities and other beneficiaries. More thought could have been given to appropriate indicators to measure institutional strengthening; the number of persons trained was an inadequate proxy measure of performance. Instead, measures could have been used such as plans, tools and systems embedded in the city's administrative procedures; the testing and use of the emergency warning system and plans; as well as measures to take over the O&M responsibilities for the new assets. Ideally, there should have been measures of O&M delivery such as the number of inspections carried out and the size of the investment in O&M.

b. M&E Implementation

Data for results monitoring were collected by the implementing agencies as per the design. The Laibin PMO, with support from a project management consultant, consolidated all the data and reported in a comprehensive and timely manner through semiannual project progress reports (ICR page 21). The reports detailed progress of the civil works, consulting services, and results as measured by the project



indicators. Progress on institutional strengthening and training was also provided periodically in the semiannual project progress reports but because this aspect lacked clearly defined indicators, it was not systematically monitored. The progress reports were complemented by adequate and timely monitoring reports from external agencies on the implementation of the Environmental Management Plan (EMP) and RAPs. The flood hazard and risks maps developed under the project strengthened the M&E processes during the latter part of project implementation, helping to highlight the contributions of project investments to flood mitigation and the drainage systems. This helped to inform the O&M plans of the project-financed assets.

c. M&E Utilization

Monthly meetings of the PIU and the PMO (including representatives from all relevant municipal departments) reviewed collected data. The data enabled the World Bank task team and the PMO to monitor progress, identify bottlenecks, and facilitate decision-making or enable proactive actions, such as increasing supervision frequency, having meetings with senior government officials, and making changes through restructurings (ICR page 22). Moreover, the implementation of this system was a useful learning experience and provided a capacity-building opportunity for local government officials. Extensive environmental monitoring data were also shared with contractors to highlight contract compliance (or the lack thereof) and with the PMO and PIU to support their ongoing project management activities

M&E Quality Rating

Substantial

10. Other Issues

a. Safeguards

The project was a Category B (Partial Assessment). It triggered two safeguard policies: the Environmental Assessment policy (OP 4.01) and the Involuntary Resettlement Policy (OP/BP 4.11).

Environmental Assessment: The principal negative environmental impacts were construction-related, mostly temporary in nature, and site-specific without significant impacts. During project preparation, the borrower prepared an Environmental Impact Assessment (EIA), in accordance with both Bank safeguard policies and Chinese national laws and regulations. There was also a standalone Environmental Management Plan (EMP) to specify mitigation measures, monitoring plans, institutional arrangements, capacity building activities, and monitored the budget for the plan's implementation. The Environmental Assessment and the EMP were disclosed on October 25, 2012, in the local newspaper Laibin Daily, and on October 30, 2012, on the Laibin Government website (www.laibin.gov.cn) as well as the World Bank website. An environmental management system was established in Laibin City, consisting of staff in the PMO, contractors, supervision engineers, and independent external environmental monitoring agencies. During implementation, the project's environmental performance was monitored and reviewed by both the PMO and third-party monitoring agencies. The EMP implementation was generally satisfactory with



particular attention paid to the safe disposal of the dredged sediments. The ICR states that the project complied with all environmental policies.

Involuntary resettlement:

The project also complied with all social safeguards policies. The project triggered the Involuntary Resettlement Policy (OP/BP 4.11) due to significant land acquisition and involuntary resettlement. This involved acquisition of 48.02 ha of land, including 15.35 ha of state-owned land and 32.67 ha of collectively owned rural land. Acquisition of state-owned land affected 11 enterprises and 63,953 m² of structures were demolished, the vast majority of which were vacant workshops. The land acquisition in rural areas economically displaced 215 households (1,075 persons) and physically displaced 416 families (2,363 persons), with 87,500 m² of residential housing demolished. A grievance address mechanism was established during implementation and at closing all outstanding grievances had been settled. The final resettlement cost was RMB 172.66 million (US\$24.88 million equivalent), more than three times the estimate at appraisal. Resettlement funds were paid to project affected persons on time from the annual fiscal budget. According to the TTL most of the additional amounts paid in compensation were due to the revaluation of the amounts payable by the authorities. Since the client used their own funding to cover this, the exact figures were however unavailable.

b. Fiduciary Compliance

Financial Management:

Some issues of note were delayed mobilization of counterpart funds, unsystematic project filing, inadequate document maintenance, delayed establishment of a project accounting system; and slow disbursements. These deficiencies according to the ICR (page 24) were mainly due to the limited experience of the borrower with World Bank financial management policies and procedures. Relevant legal covenants were complied with, and external project audits were provided on time to the World Bank with acceptable quality and unmodified audit opinions. Most of the interim unaudited financial reports were submitted in a timely manner and only three were slightly delayed (during the early project implementation years). The World Bank provided some financial management related on-the-job training and implementation support to relevant project staff, with the intention of improving the borrower's performance in financial management.

Procurement:

The overall procurement performance during implementation was rated Moderately Satisfactory in the supervision reports. A total of 15 contracts were procured (8 civil works contracts, 4 goods contracts, and 3 consulting service contracts). All civil works and goods contracts were procured using National Competitive Bidding. Of the 15 contracts, 10 were subject to prior review and 5 were post reviewed.

Procurement was generally carried out in accordance with the World Bank's procurement procedures and the agreed procurement plans. However, as discussed under efficiency, the domestic anti-corruption authority identified that there were serious fraud and corrupt practices involving PMO officials and implementing agencies' staff (subsequently prosecuted in the criminal courts for fraud and corruption in 2017). The LMG did not promptly inform the World Bank of the situation and did not take appropriate action



against the contractors in accordance with the conditions of contract(s). The TTL was alerted to the corruption allegations through an article in a local newspaper. Following an investigation by the World Bank’s Integrity Vice Presidency (INT) department in 2019, clarification from the borrower, and considering the works for these contracts were substantially complete as of the closing date of the project, the World Bank declared procurement noncompliance against these contracts in a letter dated March 12, 2020. Following this letter, the LMG agreed they would not seek payment of any unclaimed or outstanding amount under these contracts from the World Bank and instead the cost (US\$ 8.0 million) would be covered by the Borrower.

c. Unintended impacts (Positive or Negative)

None.

d. Other

11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	
Bank Performance	Satisfactory	Moderately Satisfactory	Moderate shortcomings in Quality at Entry and Supervision.
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

12. Lessons

The main lessons adapted from the ICR are:

When cities are experiencing rapid urban growth, proactive measures are necessary to mitigate risks related to potential changes in local master plans. The City of Laibin experienced unprecedented urban growth after project start-up. This resulted in substantial amendments to the local master plan and land use plans, affecting project implementation and causing the project scope to be reduced. Measures to consider for such risks include, at the project preparation stage, conducting in-depth review of local plans in the context of local urban growth trends and avoiding, to the extent possible, project investments in areas subject to potential land use planning changes, or subject to ambitious urban development schemes. During project implementation, continuous consultation with the local government and local urban planning authorities is essential to inform and support any necessary adjustments to project designs.



Failing to estimate land/resettlement complexities and costs realistically can delay implementation, particularly in rapidly urbanizing areas. The land acquisition and resettlement costs in the project were more than three times the estimate at appraisal, partly due to an underestimate of persons affected and partly due to new compensation standards. Implementation delays occurred due to the challenges of mobilizing additional counterpart funds. Special attention should be paid to the land/resettlement costs in peri-urban areas which are experiencing rapid urban sprawl with escalating construction of private buildings.

An integrated approach to flood risk management has proved to be effective in fast growing cities. The integrated approach used in the project, which combined structural and non-structural measures, proved to be effective in flood risk reduction and flood control in Laibin. However, the non-structural aspects need to be supported by strong results indicators. Measures that could have been used included plans, tools and systems embedded in the city's administrative procedures, the testing and use of the emergency warning system and plans, as well as measures to take over the O&M responsibilities for the new assets. Furthermore, there should have been measures of O&M delivery.

When most bidders are unfamiliar with the World Bank's procurement policy and procedures, holding orientation sessions can be highly beneficial. Many new bidders in China were not familiar with the tender and contracting processes applied in World Bank-financed projects. Following domestic practices, often resulted in unrealistic or unresponsive bids and in time-consuming issue resolutions during construction. Several bids under this project were rejected due to bidders' unfamiliarity with the requirements, and some implementation delays were caused by contractors not being familiar with processes for variation orders. Orientation of bidders prior to bidding helped ameliorate this issue. Pre-bid orientation sessions in addition to training activities and workshops can help mitigate this situation.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR was well-written and only slightly longer than recommended. There was a good contextual overview and a sound presentation of the Theory of Change as it applied to the project. The quality of evidence and the supporting analysis was reasonably satisfactory but in the results framework there was too much focus on measuring the works as opposed to non structural measures for the integrated nature of the project. While there was a good explanation of why the project was overtaken by the rapid urban growth and the failure of the team to anticipate the consequences of this on urban planning, the rating of quality at entry did not reflect this discussion. The presentation of the two restructurings mixed in one table was confusing and obscured the true sequence of events. On the other hand, the quality of the lessons was good and could usefully be applied to other similar projects.



a. Quality of ICR Rating
Substantial